Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. (Currently Amended) A production method for producing Group-III-element nitride single crystals comprising:

heating a reaction vessel containing a seed substrate for forming the Group-III-element nitride, a flux that comprises at least one metal element selected from the group consisting of an alkali metal and an alkaline-earth metal, and at least one Group III element selected from the group consisting of gallium (Ga), aluminum (Al), and indium (In); and

the method further comprising:

dissolving a nitrogen-containing gas in the flux of the at least one metal element in which the at least one Group III element is dissolved to produce and grow the Group-III-element nitride single crystals on the seed substrate,

wherein the flux containing the at least one Group III element and the dissolved nitrogen-containing gas flows continuously on a surface of the substrate while the reaction vessel is being rocked ~~to prepare a flux of the metal element; and~~

~~feeding nitrogen-containing gas into the reaction vessel and thereby allowing the at least one Group III element and nitrogen to react with each other in the flux to grow Group-III-element nitride single crystals,~~

~~wherein the Group-III-element nitride single crystals are grown while the flux of the metal element and the at least one Group III element are stirred together with the nitrogen-containing gas and mixed together by rocking the reaction vessel and heating a lower part of the reaction vessel to generate heat convection in addition to the heating of the reaction vessel for preparing the flux~~.

2-3. (Cancelled)

4. (Currently Amended) The production method according to claim 1, wherein ~~a substrate is placed in the reaction vessel,~~ a thin film of the Group-III-element nitride is formed on ~~a~~ the surface of the seed substrate beforehand~~, and Group-III-element nitride single crystals are grown on the thin film~~.

5-8. (Cancelled)

9. (Previously presented) The production method according to claim 1, wherein the at least one Group III element is supplied to the flux while the Group-III-element nitride single crystals grow.

10. (Previously presented) The production method according to claim 1, wherein the at least one Group III element is gallium (Ga), and the Group-III-element nitride single crystals are gallium (Ga) nitride single crystals.

11. (Previously presented) The production method according to claim 1, wherein the alkali metal is at least one selected from the group consisting of lithium (Li), sodium (Na), potassium (K), rubidium (Rb), cesium (Cs), and francium (Fr) while the alkaline-earth metal is at least one selected from the group consisting of calcium (Ca), strontium (Sr), barium (Ba), and radium (Ra).

12. (Previously Presented) The production method according to claim 1, wherein the flux of the at least one metal element is a sodium flux, a mixed flux of sodium (Na) and calcium (Ca), or a mixed flux of sodium (Na) and lithium (Li).

13-16. (Cancelled)

17. (Previously presented) The production method according to claim 1, wherein the at least one Group III element and nitrogen react with each other under conditions including a temperature of 100°C to 1200°C and a pressure of 100 Pa to 20 MPa.

18. (Previously presented) The production method according to claim 1, wherein the nitrogen (N)-containing gas is at least one of nitrogen (N_2) gas and ammonia (NH_3) gas.

19. (Cancelled)

20. (Currently Amended) The production method according to claim 4, wherein the thin film formed on the seed substrate is single crystals of Group-III-element nitride or is amorphous Group-III-element nitride.

21-25. (Cancelled)

26. (Previously presented) The production method according to claim 1, wherein transparent single crystals are grown.

27-36. (Cancelled)

37. (Withdrawn – currently amended) An apparatus that is used in a production method for producing Group-III-element nitride single crystals according to claim 1, comprising:

a means for heating a reaction vessel for preparing a flux by heating at least one metal element selected from the group consisting of an alkali metal and an alkaline-earth metal contained in the reaction vessel;

a means for feeding nitrogen-containing gas to be used for reacting a Group III element contained in the flux and nitrogen to each other and growing the Group-III-element nitride single crystals on a seed substrate by feeding the nitrogen-containing gas into the reaction vessel; and

a means for dissolving the nitrogen-containing gas in the flux of the at least one metal element in which the Group III element is dissolved and flowing the flux containing the at least one metal element and the Group III element continuously on a surface of the seed substrate by rocking the reaction vessel in a certain direction, wherein

the means tilts the reaction vessel in one direction and then tilts it in an opposite direction to the one direction.

38. (Cancelled)

39. (Withdrawn) A reaction vessel that is used in a production method for producing Group-III-element nitride single crystals according to claim 1,

wherein the reaction vessel has a cylindrical shape and includes two projections that protrude from an inner wall thereof toward the circular center, and a substrate placed between the two projections.

40. (Cancelled)

41. (Withdrawn) A reaction vessel that is used in a production method for producing Group-III-element nitride single crystals according to claim 1,

wherein the reaction vessel is formed of or coated with at least one material selected from the group consisting of AlN, SiC, and a carbon-based material.

42 - 43. (Cancelled)

44. (New) The production method according to claim 1, wherein Group-III-element nitride single crystals having a dislocation density of $10^4/cm^2$ or lower are grown.

45. (New) The production method according to claim 1, wherein Group-III-element nitride single crystals having a largest diameter of at least 2 cm are grown.